

The Ballarat Naturalist

Volume 24 No.06

July 2024



“Myxomycetes at Black Sugarloaf: Unfolding a slime mould hotspot” by Sarah Lloyd OAM, Fungimap.

Imagine stepping into a micro-universe of wondrous and mysterious creations of nature. "If you're in the field long enough, you see some pretty amazing things," says Sarah – and she's not wrong. Her explorations of the fascinating world of slime moulds are a testament to the intricacies of nature that often go unnoticed.

From Emily Noble's introduction of Sarah and her impressive pronunciation of 'myxomycetes,' we journeyed into the enchanting world of slime moulds. Naturalist, photographer and writer Sarah Lloyd lives on 130 acres in central northern Tasmania and has classified at least 163 different species on her block. Most of her explorations occur within a 1km stretch of walking track, scouring logs, trunks, stumps and leaf litter for signs of life. Her work has expanded slime mould knowledge exponentially (with only 42 species of slime moulds known in the whole of Tasmania before her research began), leading to a species being named after her (*Alwisia lloydiae*).

Trichia erecta



A Brief History of Slime Mould Classification

These complicated organisms have a fascinating history of classification, having puzzled scientists for centuries. They were first classified in the 1700s by Swedish biologist and ‘father of taxonomy’ Carl Linnaeus as belonging to the plant kingdom (*Species Plantarum*). However, it was soon recognised that they did not have photosynthesising green cells and when examined under a microscope their structure is very different to plants. Thus, the fungi kingdom was added, to which slime moulds were included until around the middle of the next century. Researchers then began referring to slime moulds as *Mycetozoa* or "fungi animal" which is still used today in some texts. Based on the moving/feeding stage they were classified as *Protista/Protoctista*, however their life cycle stage is a bit more complicated because they also have a single cell amoeboid stage that lives in the soil, so based on the amoeboid stage they are now classified as *Amoebozoa*. In summary, they are very complicated organisms!

Sarah’s Slime Mould Journey

Sarah moved to Sugarloaf at the end of 1988, in the middle of a eucalypt forest with many gullies, wet forest species, swamp forests and dogwood forests – all fabulous substrates for slime moulds. Soon after her move, she began developing an inventory of the amazing organisms on her block, including contributing to the Fungimap project. Through Fungimap, Sarah was introduced to slime moulds, and by 2010 she began to study them around her home.

Studying slime moulds is very challenging: they are incredibly small, cryptic, ephemeral and unpredictable. Sarah shared how they can be as small as 2mm high, brightly coloured at some stages then camouflaged the next, often don’t appear in the same place each year, and are very delicate. Using a headlamp and hand lens to locate them, Sarah then marks their location in order to return and observe their development.

The Life of Slime Moulds

Slime moulds are very brightly coloured when they first appear. Sarah provided an example of a beautiful young *Trichia* on wood, with tiny *Clastoderma debaryanum* among it. (see Page 1).



Lamproderma 'obovoid'
(new species)

She also showed photos of the plasmodial stage of slime moulds where their whole body moves by cytoplasmic streaming, moving forward, backward, and then forward again. They feed as they move along, mostly in logs, leaf litter, or soil, and can cover a few metres in a day.

Researchers often survey slime moulds by collecting materials like bark, leaf litter, and organic matter, and placing them on wet paper towels in petri dishes. Slime moulds appear rapidly in this environment, enabling close examination of tiny species. In contrast, Sarah's fieldwork involves daily explorations of her favourite spots like Big Tree Track, which offers fantastic substrates for slime moulds. A recent DNA study of a sample from Sarah's block led to the exciting discovery of a new species in Tasmania, which she and others aptly named *Tasmaniomysa umbilicata*, with 'Tasmaniomysa' reflecting its geographic origin and 'umbilicata' referring to its umbilical-like stalk attachment.

Rich Study Sites and Ecological Roles

Several plant species contribute to the richness of Sarah's study site, including *Clematis aristata*, native *Bedfordia salicina*, tree ferns and dogwood trees. These plants provide excellent substrates for slime moulds, each offering unique environments for various species.

Sarah noted that if you find one species of slime mould on a log, it's worth checking the rest of the log as multiple species often coexist.

Slime moulds play significant ecological roles. They have a major influence on soil micro-organisms, where myxamoebae feed on nitrogen-rich bacteria, yeasts, fungi and algae, while plasmodia feed on fungi, algae, and lichens, recycling nutrients in the process. They also provide food for collembola (Springtails) and other invertebrates, and substrates for fungi and spermatophores. Their protein-rich spores are a food source for beetles that have special mouth parts for carrying spores. The beetles move in and live in developing fruit bodies where they feed and multiply.

Capturing the Beauty of Slime Moulds

Sarah's tools of the trade include a stereomicroscope, compound microscope, and a Canon MP-E65 F2.8 1-5x extreme macro lens for field photography. Interestingly, there is no 'right way up' for slime mould photos, even though they can appear upside down if compared to fungi.



Discover More About Slime Moulds

For more on these superb organisms, check out Sarah's books: "Where the Slime Mould Creeps, 4th Edition" and "Myxomycetes at Black Sugarloaf Tasmania, Australia." Looking for a getaway in August? Pop over to Tasmania and head to Westbury for Sarah's "Enchanting Slime Moulds" exhibition, open daily from August 10th - 16th during National Science Week. Immerse yourself in the captivating world of slime moulds through Sarah's eyes.

Write-up by Sheree Cartledge.

Images Sarah Lloyd

Our Club Fungi Foray June 9th 2024

After below average rainfall in late summer and autumn the outlook for fungi sightings did not look all that promising for our June fungi excursion. However, we found plenty of species to keep us occupied for a full day's foraging near Cairns road, Korweinguboorra and later near Slaters road, Mollonghip. Sixteen members and four visitors braved the cold damp weather to attend.

Near where we parked our cars in Cairns road, we found many species among the tangle of both felled and wind thrown Messmate tree trunks. Three species of the *Hypholoma* genus were seen here. These were the Sulphur Tufts *Hypholoma fasciculare*, Brick Caps *H. australe* and the brown *H. brunneum*. Rows of white scales surrounded the base of the dark brown unexpanded caps of the *Hypholoma brunneum*. (below)



Some small specimens of the Orange Peel fungus were seen again this year. Among the tangle of tree trunks on the soil leaf litter was the first of the two Waxcaps seen on the foray. The clump of the convex shiny red caps of this species was hard to miss. Joy identified this species as Vermilion waxcap *Hygrocybe miniata*. (right)



The leather shelf fungus *Stereum illudens* was spread along and under logs and branches. The smooth underside of this species is a greyish purple with white edging.

Along the Great Dividing Trail more species were seen. On the track was a chalk white *Russula* species. A few *Laccaria* sp., *Lactarius eucalypti*, and *Pholiota communis* were noticed along the track.

The next waxcap seen was the yellow *Gloioxanthomyces chromolimoneus*. (right).

The new genus name means glutinous yellow fungus. The main clump consisted of four waxy yellow all over fruitbodies with about 16mm caps on stems 40mm tall.

One case of fungus growing on another fungus is the species *Neobarya agaricola*.

The small yellow spikes of this species were all over another small species.

The yellow Pretty Horn *Calocera sinensis* and the

yellow Jelly Bells *Heterotextus peziziformis* were seen mostly on small dead branches and logs. The bright yellow rod-like fruitbodies of *Clavulinopsis amoena* were just protruding from ground litter. Nearby were some 25mm tall red rods of possibly *Clavulinopsis corallinorosacea*.



The orange red capped *Cortinarius austrocinnabarinus* was the first Cortinar seen on the day. The well named Split Gill *Schizophyllum commune* was spread along a dead branch. On the same branch was a solitary fruitbody of the Honey Fungus *Armillaria luteobubalina*. This parasitic fungus is usually seen in clusters.

Various *Mycena* species were seen including the Tall *Mycena cystidiosa*, *M. albidofusca*, *M. subgalericulata* and the beautiful blue Pixies Parasol *M. interrupta*.

Near Slaters road Mollongghip we headed towards the place where Elspeth had found an intriguing fungus three weeks earlier.

Mycologist Tom May identified it on the day as *Grifola colensoi*.

The large fruitbody 350mm wide and 250mm tall consisted of greyish brown overlapping lobes radiating from a common base on a buried root near a tree. The underside of the lobes consisted of a buff-coloured surface with elongated angular pores. Tom also identified

a large bracket fungus seemingly situated on clay at the base of an upturned Messmate as *Fistulina spiculifera*. (right). The substrate for this fungus was the wood of a tree root, not the clay. We saw a specimen of the Beefsteak fungus *Fistulina hepatica* earlier in the day on a stump.



We could compare an immature and a mature *Austropaxillus infundiliformis* fruitbodies. The funnel shaped cap on the mature specimen had deeply decurrent gills down the stem. This fungus is found early in the fungi season.



Members found a young fruit-body of the colourful purple *Cortinarius archeri*. (left) The partial veil of this specimen was still intact. Older specimens of the green capped *Cortinarius austrovenetus* were noticed. Later we saw the bright red *Cortinarius persplendidus*. This species has paprika red gills, the lower stem is yellow and has yellow

mycelium under the base of the stem.

Joy identified one greyish mauve coral fungus as *Ramaria aff.versatilis*. One of the Enteloma species seen was identified as the pale brown *Enteloma readiae*. The depressed cap centre is a darker brown. Enteloma species are usually seen on the ground alongside dead or decayed tree trunks. The pinkish fawn cap of *Tricholoma eucalypticum* was on the ground near a tree stump. The cap was about 140mm wide. We did not find any sign of the rare brown soil inhabiting *Sarcodon* species where Vireya found a fruitbody last year. This species has grey, brown spines instead of gills or pores on the underside. We did not see large numbers of any one species but saw quite a lot of different species on the foray.

More Fungi discoveries on our Excursion



Mycena subgalericulata



Tremella fuciformis Snow fungus

A TALE OF 2 HATCHINGS. Jenny Sedgwick

It began on a cold windy day in the midst of a week of icy storms. Some crusty shrivelled black chrysalises were found attached to 'panty hose' like sheets of silk. They were on Drooping Mistletoe (*Amyema pendula*), hanging from a small Blackwood (*Acacia melanoxylon*), and looked empty and lifeless, victims of the wet spring.



24 September 2022



30 September 2022

It's interesting to note the head shell left behind as the pupa is formed. Could they have been parasitised by wasps? Roger Thomas suggested they fitted the description for Imperial Jezebel. Nothing happened for weeks but we watched and hoped until suddenly...a bonanza! Within a few days, a mass hatching occurred and as predicted they were Imperial Jezebel. It was an exciting and spectacular experience. Most were fine, and pumped and dried their

wings and departed within a day of leaving the cocoon. One little one sadly never managed to unfurl. A couple didn't fully emerge. No predators were noted.



17 October 2022



Fast forward to mid January 2024 and share our excitement in finding small webbing patches, but this time the pupae look like delicious, old fashioned barley sugar lollies. The cast-off caterpillar heads are a bit more obvious. The same mistletoe species is the host but on a dying spindly eucalypt. We wonder what might emerge this time, but learn that this is the summer uniform for the Imperial Jezebel transformation. Again, we watch the emergence of the next generation of beautiful creatures over a few days. We now look closely at any low hanging mistletoe- will we get lucky again?



Caterpillars January 2024



Emergence 6 February 2024



Excerpts from Club Meeting Minutes 7.30pm, June 7th, 2024. Held in person and via Zoom

Opening and Apologies

Chairperson Neville Oddie welcomed 23 members and two visitors attending the meeting in person and five members and a visitor attending via Zoom.

Apologies: Angela Aldred, Shirley Faull, Mark Moravec and Andrew Grant.

Guest Speaker: Sarah Lloyd OAM presented “Myxomycetes at Black Sugarloaf: unfolding a world slime mould hotspot”. It was an eye-opening talk on her discoveries/ research into a fascinating group of hard-to-pigeonhole organisms.

Business Arising from Correspondence:

- Discovering Ballarat’s Bushland: quotes for printing have been received with the sub-committee to meet next week to discuss the various options and numbers to print.

- The Committee was pleased to announce that they have chosen to nominate Roger Thomas for the FNCV’s Australian Natural History Medallion 2025. Work has begun to collate supporting information that will highlight all the ways in which Roger’s active involvement in natural history, community education, conservation and record-keeping meet the selection criteria and confirm his eligibility as a nominee.

- After discussion at the Committee Meeting, FNCB has joined the Victorian Environment Friends Network. It brings us into an extensive network of like-minded groups in Victoria with opportunities for collaboration, knowledge-sharing and environmental advocacy.

- Discussed a proposed mid-week, in-house iNaturalist training session for members. There was considerable interest in the proposal so the Committee will move forward in planning the activity. It was noted that the impetus for the session was an invitation from Ballarat Libraries to help run an iNaturalist training session for families in the school holidays, which highlighted our own need for greater familiarity with iNaturalist and particularly its use via the phone app. Judith suggested that the Ballarat Observatory would be a good place to run the Ballarat Libraries’ family session, which Emily will pass on to the Libraries.

- John P. came across another bookshelf needing a new home. Emily picked it up this week and installed it in the Clare Miller Environment Centre, ready to hold more of the Club’s library when

she and Elva manage to find a time to start cataloguing the collection.

Reports:

Treasurer's Report

Opening bal. as at May 3, 2024: \$9,293.23
Income \$73.00
Expenses: \$115.60
Closing bal.: \$9,250.63

P.S. Please don't forget to renew your membership if you haven't already done so. (Kathy was happy to note that almost all existing members have already renewed their membership).

*John P noted that we need to purchase ten QR Codes to be placed on signage along the La Gerche Trail, Creswick to link people to more information on the FNCB website.

* **Motion:** That ten QR Codes be purchased at a cost of approximately \$50.00.

Moved: J. Petheram **Seconded:** M. Rich **Carried.**

General Business

Sunday 9th June field trip, 9.30am – 3.30pm: “Fungi Foray-Korweinguboora, Moorabool Reservoir & Mollongghip” to be led by Les Hanrahan. .

Max Thompson provided multi-faceted encouragement to participate in the write-up of field trips in light of his own recent experience as a first-timer, highlighting many of the personal benefits. He highlighted that he received helpful mentoring, direction to resources and advice such as “write in your own personal style rather than trying to emulate anyone else”, “try to paint a picture of the experience for those who couldn't attend” and “there is no need for it to be a technical write-up” (things like Latin names can be added by others later). He noted that the opportunity to attend the field trip scoping trip beforehand was a real bonus. He also pointed out that other members were very generous in checking-in throughout the field trip to ensure highlight observations were recorded. He recommended picking a destination or field trip with a focus that you are particularly interested in because you will learn more as you do your fact-checking and you will remember the experience and learnings better than on excursions that you simply attend.

Judith suggested that a visit to the Ballarat Observatory would reward fungi-inclined members at the moment and she would

appreciate it if any fungi found in the grounds was photographed and uploaded to iNaturalist for identification/ sharing.

Margaret Rich noted that last month Nicole Kearney from Biodiversity Heritage Library returned all of the Club newsletters supplied to the Library for digitisation. They are now at Clarkesdale where they can be picked up by the members that supplied them or left to be part of the Club's comprehensive archive of newsletters.

Show & Tell/ Field Reports

Andy showed a video of a very active Rakali in the waterway opposite his house at Alfredton on a mild Autumn day, noting that he recently learnt that they are very sensitive to temperature and don't function well when the water temperature is below 15 degrees Celsius.

To add to the above observations, Carol, who is a member of the Rakali Quarterly Survey Group noted that Rakali can regularly be seen at any time on sunny days, not just at dusk or dawn, and that Lake Wendouree has been acknowledged by the Australian Platypus Conservancy as one of the best places to see Rakali. Following on from her field report and photos last meeting, Carol also recommended an article on Grey-headed Flying Foxes in the current edition of Australian Geographic.

Wendy saw her first ever (Varied) Sittellas hopping down and along the tree trunks. Their black caps first caught her eye, followed by their sturdy yellow legs and the flash of orange across their wings as they flew between trees near Potter's Dam, Clarkesdale Bird Sanctuary a few days ago.

Roger checked the Ballarat Botanical Gardens today and found that all of the Grey-headed Flying Foxes have moved on.

Les recently observed a Royal Spoonbill in a dam at his farm in Bungaree. He also brought along Sarah Lloyd's latest book for members to see.

Judith mentioned that she has had visits from Grey-headed Flying Foxes at her place in Clarendon over the last few years, enjoying her figs and apricots.

Neville described the cool burns of the grasslands on his Chepstowe farm he has recently been undertaking, with up to 15 brown birds of prey (hawks/ falcons?) circling above and having a feast on creatures avoiding the slow-moving front.

Emily reported on a pair of Pink Robins at Clarkesdale Bird Sanctuary and the resumption of Powerful Owl calling in the Bird Paddock at dusk and throughout the night to 5.30am. She also reported that she hasn't found a single flowering Tiny Greenhood (*Pterostylis parviflora*) or Red-tipped Tiny Greenhood this year at

her Scarsdale property or in the adjoining Ross Creek State Forest where they were common up until last year when they were scarce.

Ballarat FNC Website

Some members may be unaware that our club has a website where we occasionally add items of general interest and some excursion reports for those who would like to receive an update by email. A recent post included details of a visit some of us had to a site in Wombat State Forest with Dr Tom May. Our club also regularly shares information on Facebook and Instagram. It is a way to attract new members and raise awareness of some of our activities. The website also has our calendar of activities and pages about La Gerche, Enfield Forest and local orchids. If members just want to go directly to our blog they will see the latest post. fncb.org.au

We have 1000 followers on Facebook Elspeth Swan

Our Next Club Meeting Friday July 5th 7.30 pm

“80 years of bird photography” to be presented by David Hollands, author of “Better Born Lucky Than Brilliant - Life of a country doctor and naturalist” - in person and via zoom.

David will also bring copies of his books for sale
Birds Australia members have also been invited.

Arrangements for Sunday July 7th Field Trip-

9.30am – 4.00pm: Environmental Recovery from the Bushfires near Beaufort — Mt Cole, Mt Buangor. to be led by Neville Oddie

Meet in the Fed Uni carpark on corner of Gillies and Gregory Sts for carpooling/convoy and departure at 9.30am sharp.

OR at the carpark next to the band rotunda at Beaufort by 10.00am.

Public toilets are located over the main road on the corner of the shopping precinct in Beaufort. Lunch at Richards Campground.

Afternoon visits have been suggested to Ben Nevis, Lake Goldsmith or inspect Trewalla state forest near Beaufort.

Warm clothes, rain gear, hand sanitiser, toilet paper and **clean, sturdy shoes are recommended** *which we will sanitise.*

Bring water, small mirror, camera, magnifying lens, field guides, morning tea, lunch, thermos and camp chair

Meetings and Excursions

Fri July 5th Speaker David Hollands *80 Years of Bird Photography*

Sun July 7th Environmental recovery from Bushfires near Beaufort. Leader Neville Oddie

Future events

Fri Aug 2nd Speaker BJ Convenor of U3A Orchid group-

Sun Aug 4th Orchid discoveries location TBA led by BJ

Volunteers needed to write up these events for our newsletter.

Next Committee meeting Tues. July 23rd at 7.30 pm by Zoom

**Club meetings are normally held on 1st Friday of the month at
7.30 pm at the Federation Uni Gillies St Campus (corner of
Gillies and Gregory Sts, Lake Wendouree),
Committee**

Website: <http://fieltnatballarat.wordpress.com>

Club email: ballaratfnc@gmail.com

Meetings - in person and may continue to be held via Zoom.
Members will be kept informed of arrangements each month.

A monthly publication of the Field Naturalists' Club of Ballarat Inc.
Incorporation # A0014919P ABN 13 150 403 135